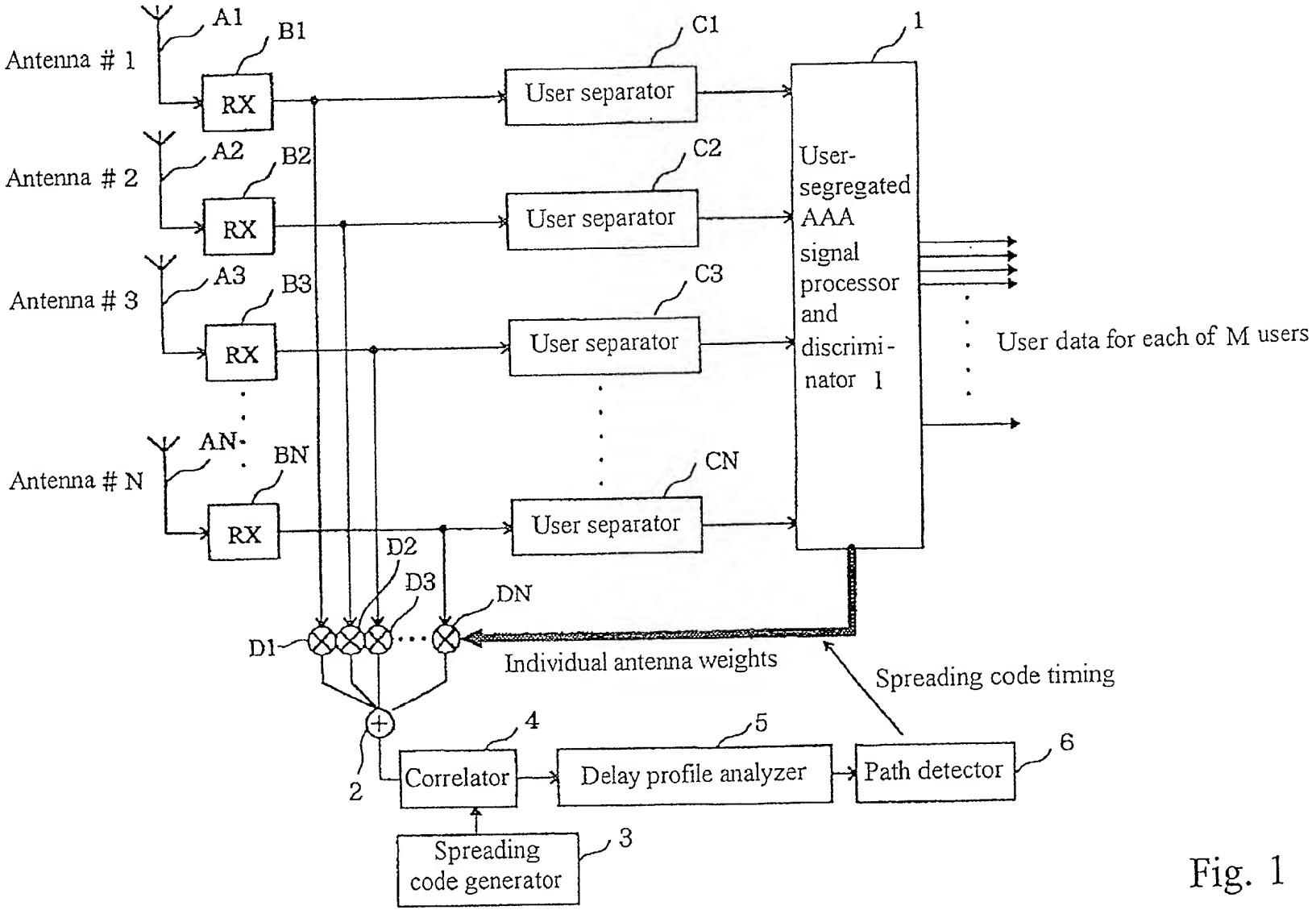

Antenna # 1
Antenna # 2
Antenna # 3
Antenna # N
A1
A2
A3
AN
B1
B2
B3
BN
RX
RX
RX
RX
C1
C2
C3
CN
User separator
User separator
User separator
User separator
1
User-segregated AAA signal processor and discrimi-nator 1
User data for each of M users
D1
D2
D3
DN
Individual antenna weights
Spreading code timing
2
4
Correlator
5
Delay profile analyzer
6
Path detector
3
Spreading code generator

Fig. 1

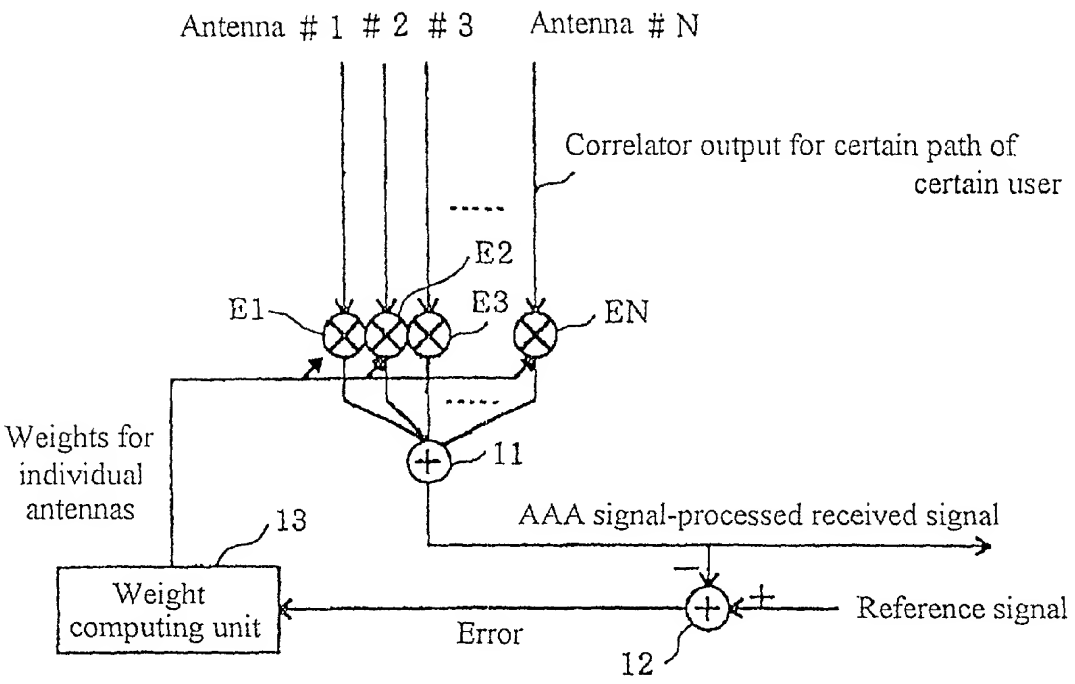
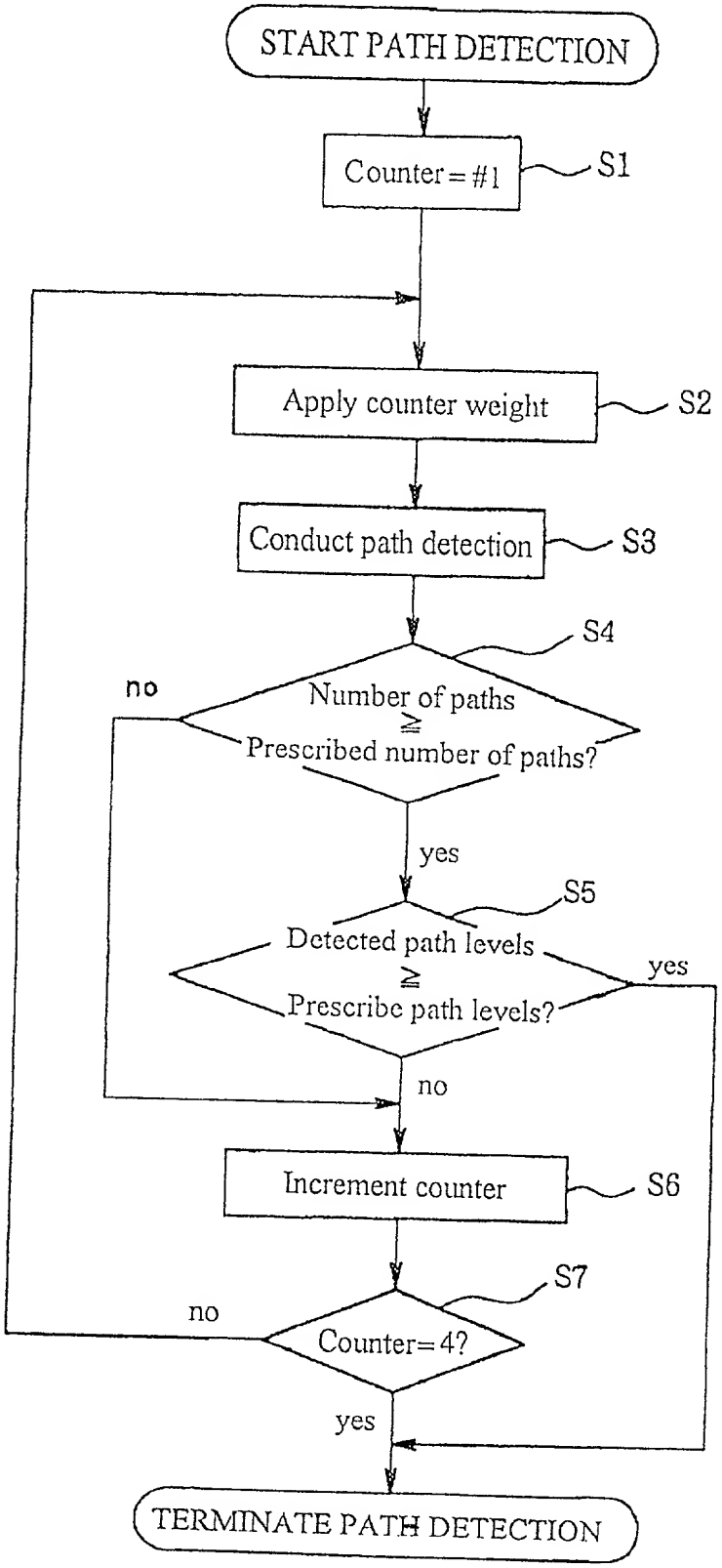

Antenna # 1
2
3
Antenna # N
Correlator output for certain path of certain user
E1
E2
E3
EN
11
Weights for individual antennas
13
AAA signal-processed received signal
Weight computing unit
Error
Reference signal
12

Fig. 2

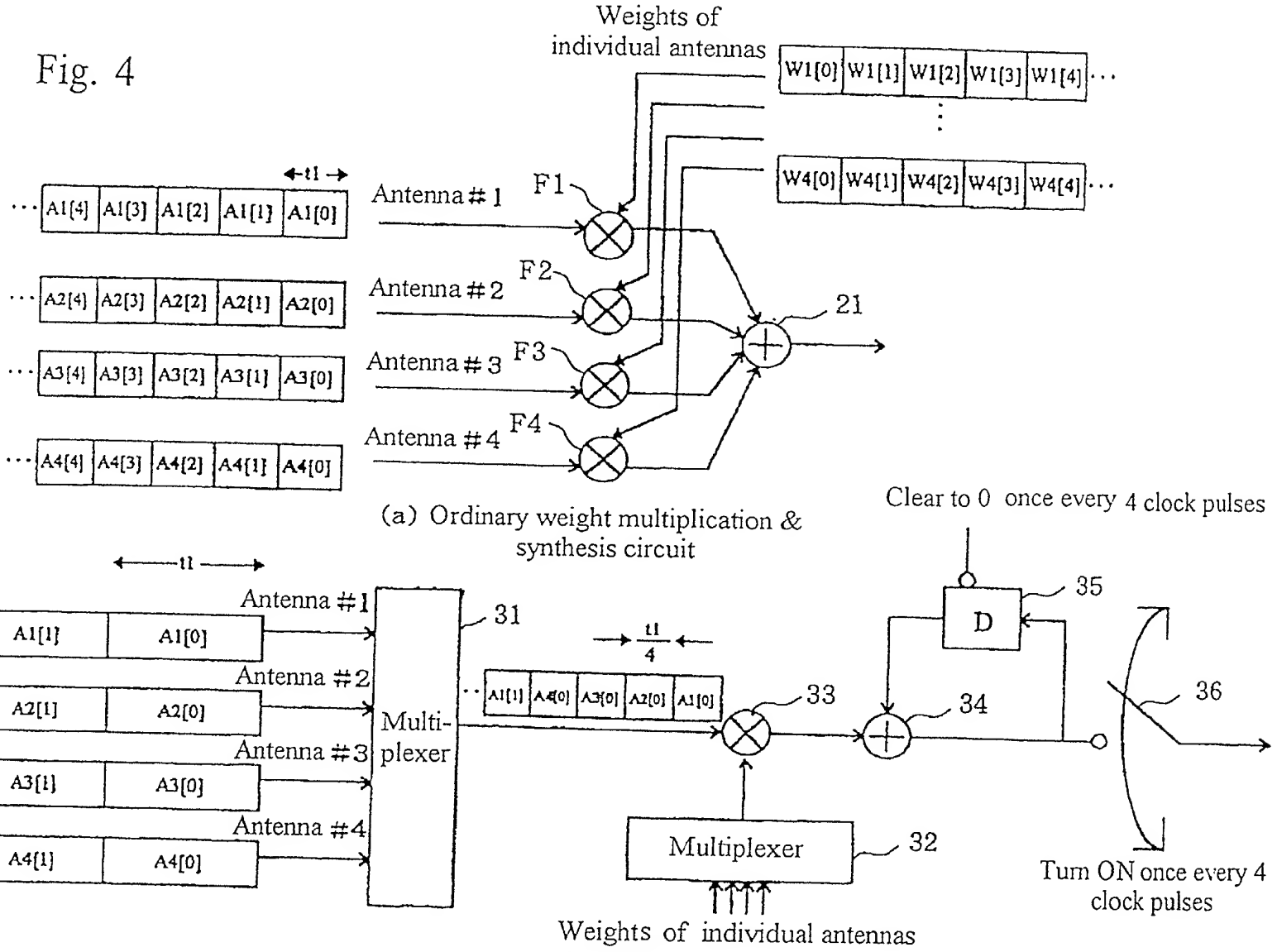


#1 : Leading path weight
#2 : Highest path weight
#3 : Average path weight
#4 : Lowest path weight

Terminate path detection if number of paths and path levels sufficient

Fig. 3

Fig. 4


Weights of individual antennas
W1[0] W1[1] W1[2] W1[3] W1[4]
W4[0] W4[1] W4[2] W4[3] W4[4]
tl
A1[4] A1[3] A1[2] A1[1] A1[0]
A2[4] A2[3] A2[2] A2[1] A2[0]
A3[4] A3[3] A3[2] A3[1] A3[0]
A4[4] A4[3] A4[2] A4[1] A4[0]
Antenna # 1
Antenna # 2
Antenna # 3
Antenna # 4
F1
F2
F3
F4
21
(a) Ordinary weight multiplication & synthesis circuit
Clear to 0 once every 4 clock pulses
tl
Antenna #1
Antenna #2
Antenna #3
Antenna #4
A1[1] A1[0]
A2[1] A2[0]
A3[1] A3[0]
A4[1] A4[0]
Multi-plexer
31
tl/4
A1[1] A4[0] A3[0] A2[0] A1[0]
33
34
35
D
36
Multiplexer
32
Turn ON once every 4 clock pulses
Weights of individual antennas
(b) Weight multiplication & synthesis circuit using time division

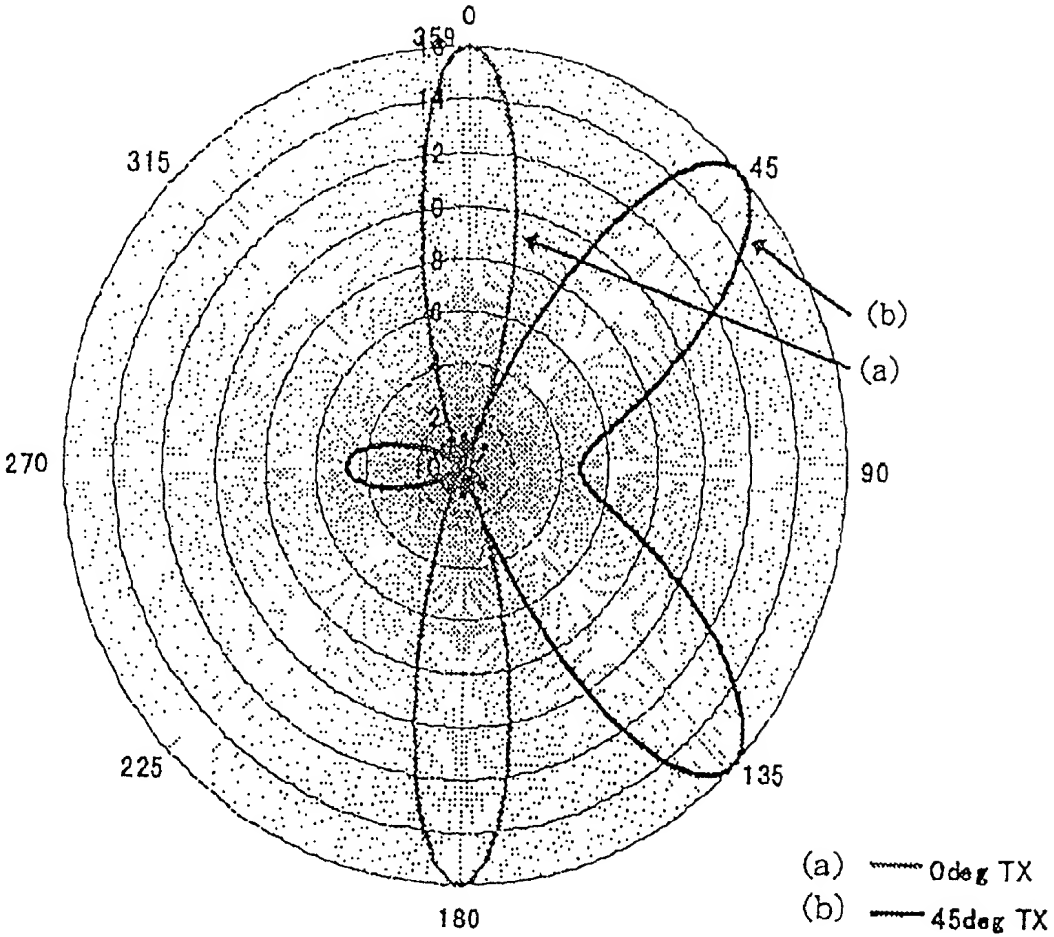


Fig. 5

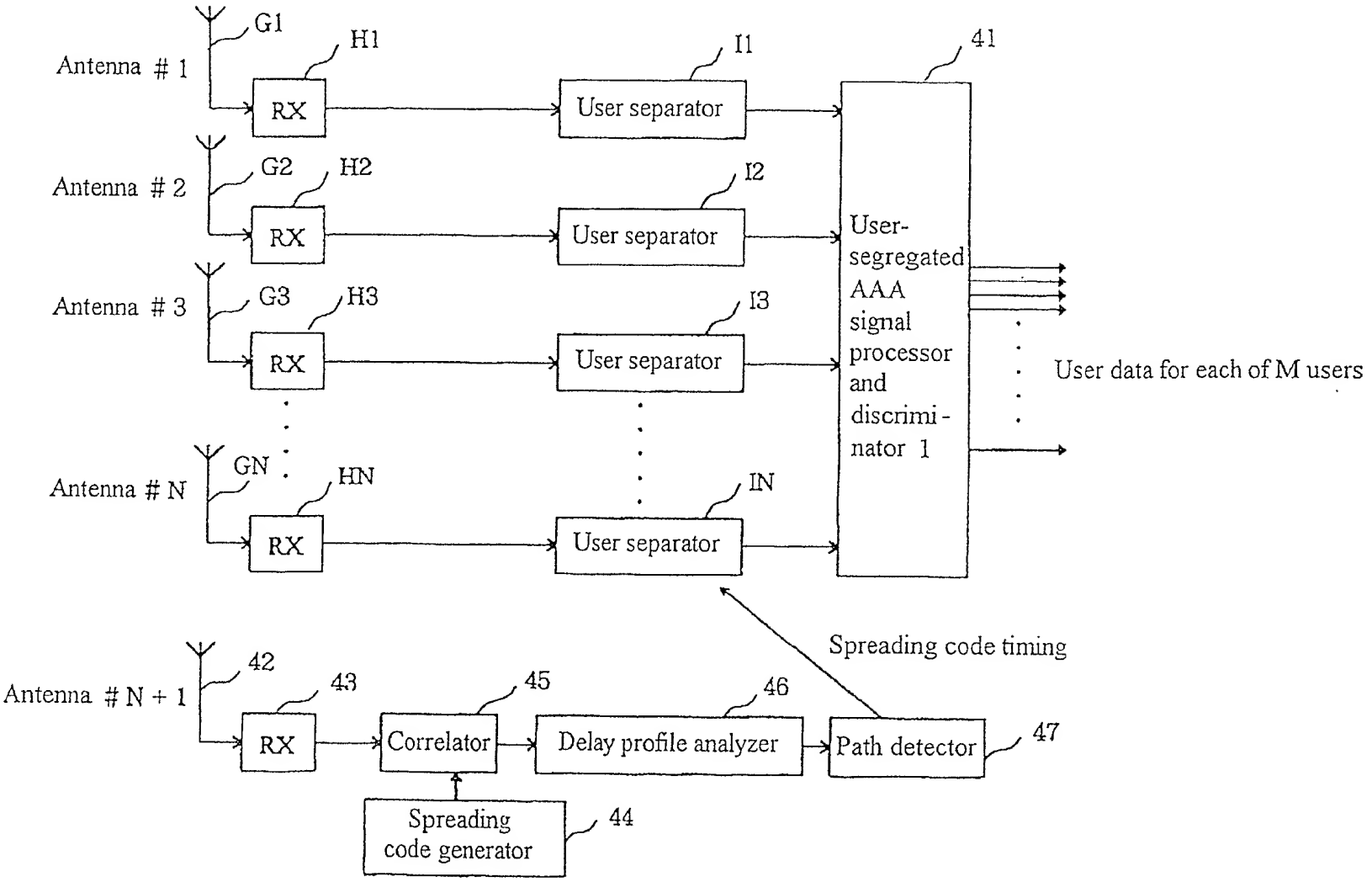

Antenna # 1
G1
H1
RX
User separator
I1
41
Antenna # 2
G2
H2
RX
User separator
I2
Antenna # 3
G3
H3
RX
User separator
I3
User-segregated AAA signal processor and discrimi-nator 1
User data for each of M users
Antenna # N
GN
HN
RX
User separator
IN
Spreading code timing
Antenna # N + 1
42
43
RX
45
Correlator
46
Delay profile analyzer
Path detector
47
Spreading code generator
44

Fig. 6

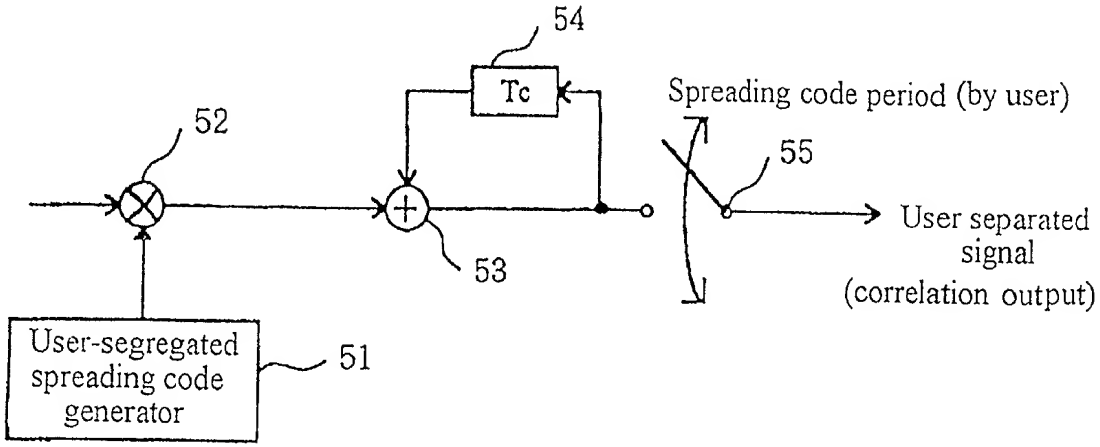

54
Tc
Spreading code period (by user)
52
55
User separated
signal
(correlation output)
53
User-segregated
spreading code
generator
51

Fig. 7

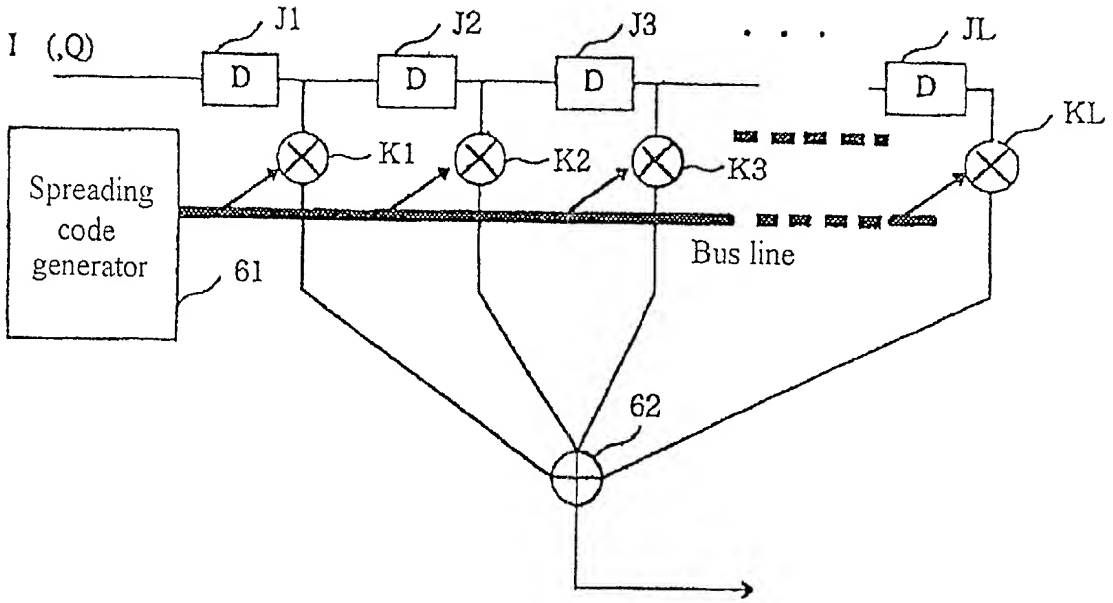

I (,Q)
J1
J2
J3
JL
D
D
D
D
K1
K2
K3
KL
Spreading code generator
61
Bus line
62

Fig. 8

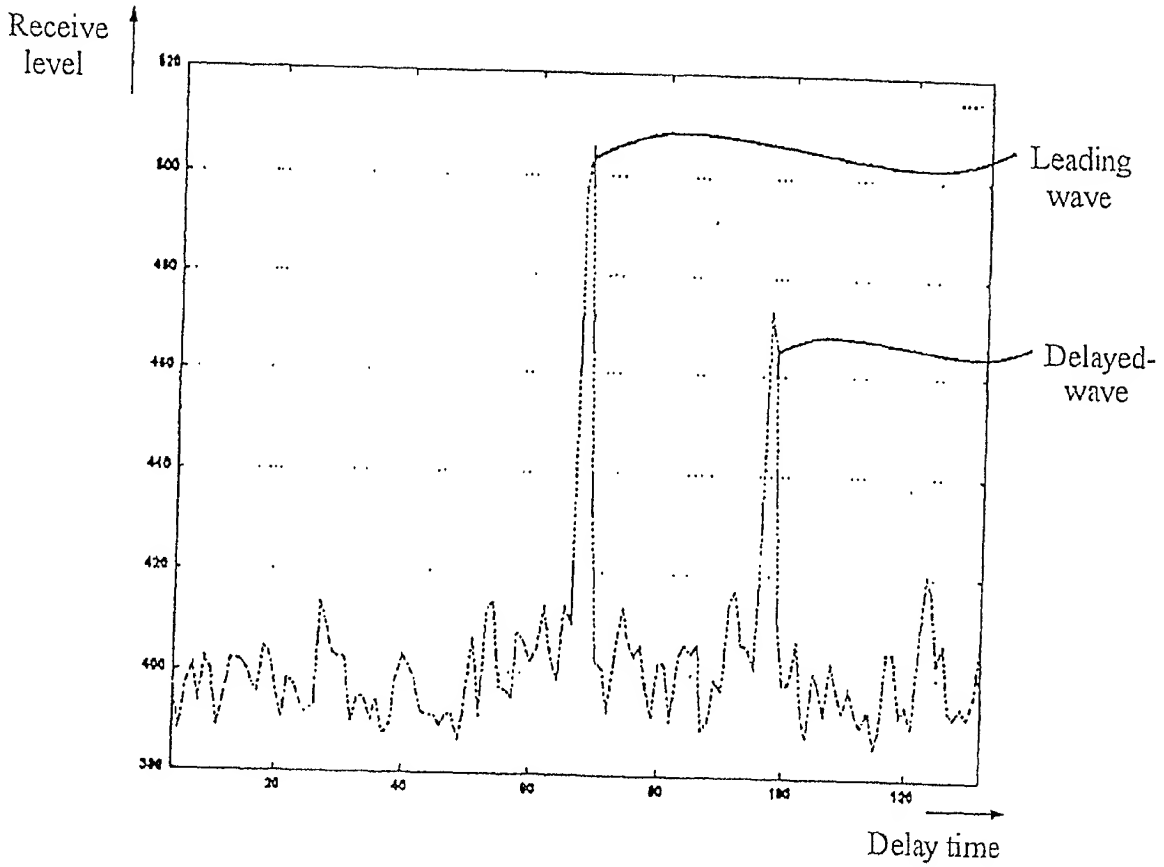


Fig. 9

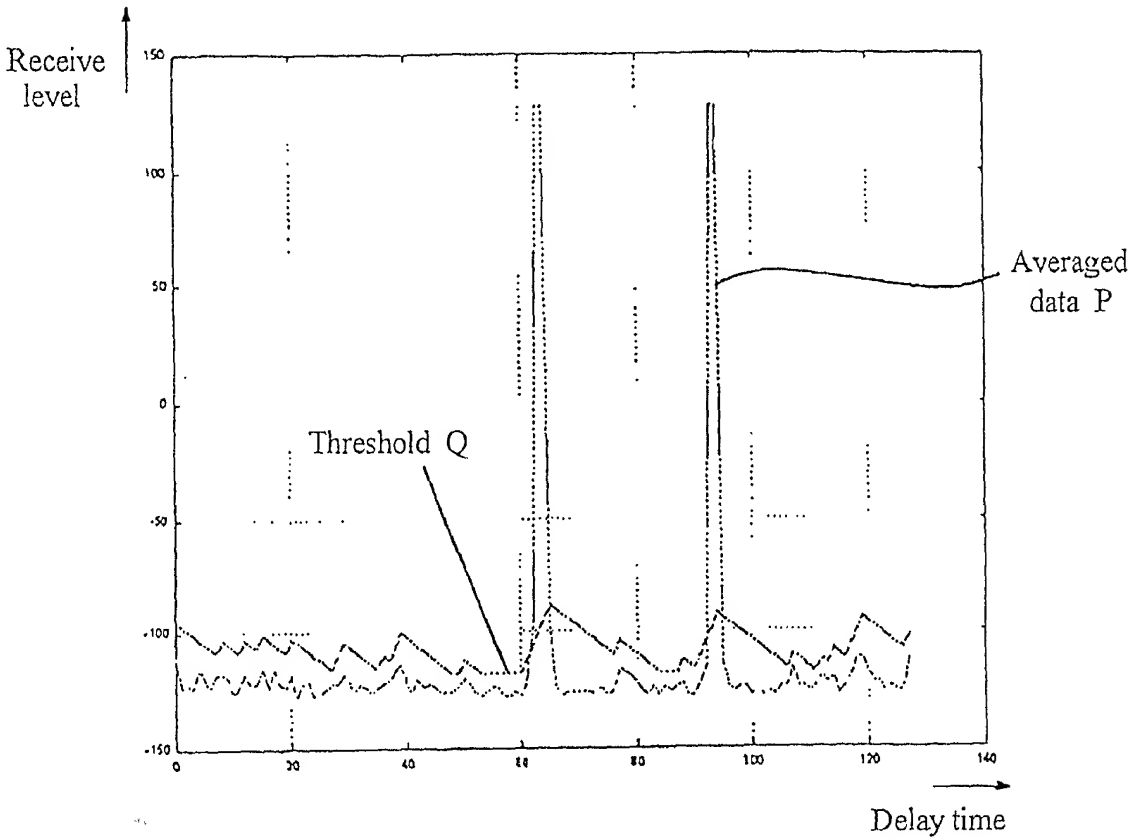

Receive level
150
100
50
0
-50
-100
-150
0
20
40
60
80
100
120
140
Averaged data P
Threshold Q
Delay time

Fig. 10